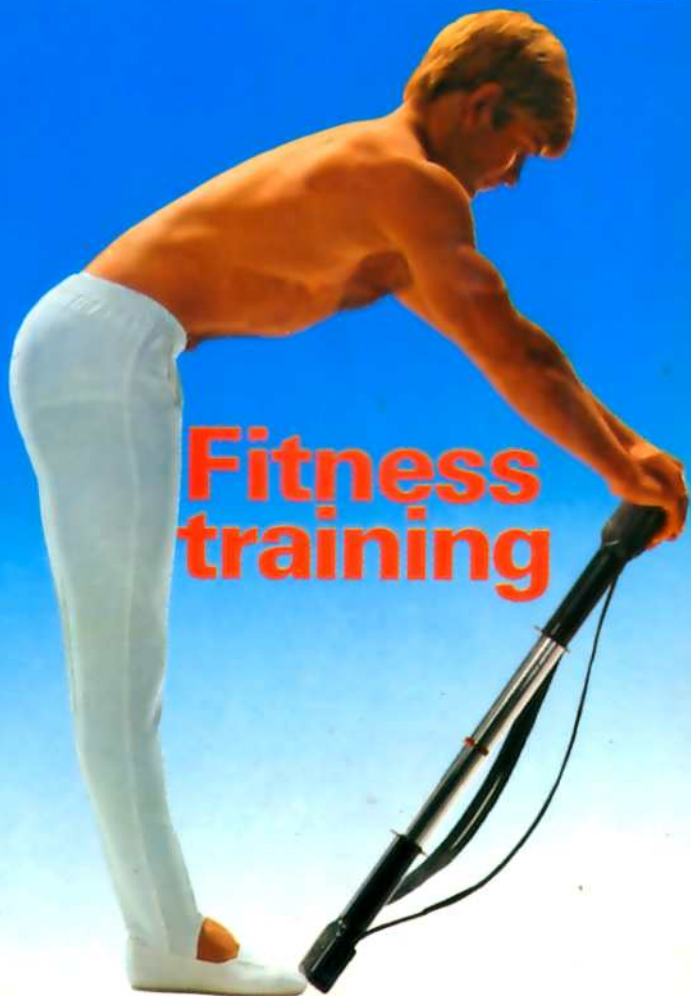


# Bullworker®

FULL RANGE

Fitness  
training



# Bullworker® X5

high-impact thermal plastic telescoping handle

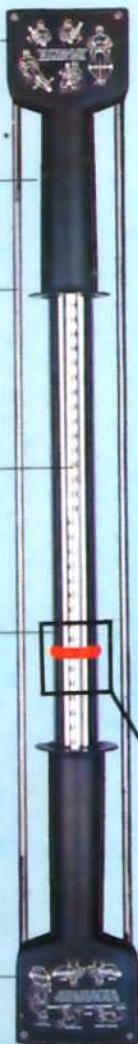
non-slip cylindrical grip

two wear-resistant webbed traction ropes

chrome-plated steel tube with recessed Power Meter scale

Power Meter gauge for measuring daily fitness gains

"illustrated fitness exercises, finger grooves on back."



The individual parts of the Bullworker are manufactured from high-quality wear-resistant materials. Each part is carefully inspected, fitted and assembled by hand. High grade steel and thermoplastic synthetics are the only materials employed. The built-in compressive steel springs are permanently set and will never slacken. Insulation of the moving parts assures low noise level operation. The Bullworker X5 is only about 3 feet (90 cm) long and weighs just 3 pounds (1.3 kilos) so it is easily portable. Each Bullworker is tested for perfect functioning before it is released for shipment.

## POWER METER

The built-in Power Meter measures precisely and automatically your increase in strength, as you exercise. To determine your progress, simply check the reading attained after each exercise against your performance of the day before.

"We reserve the right to make from time to time such changes in the Bullworker X5 featured in this book as are deemed necessary to improve its appearance and functioning."

Printed in Italy

World-wide patents  
© Registered trademark



# Bullworker®

## INTERNATIONAL

Over the past decade Bullworker has established a world-wide reputation as a fast, easy and effective home fitness trainer. More than five million Bullworkers have already been sold, over a million in the United States alone.

The Bullworker Fitness Training program has been translated into dozens of languages and enthusiastically recommended by fitness experts, champion athletes, coaches and fitness-conscious men the world around.

From the realization of the first prototype, inventor Gert F. Kölbel has constantly endeavored to improve the Bullworker in efficiency, durability and appearance. He has now engineered a major break-through in fitness training techniques: the full range Bullworker X5. Thanks to a combination of double traction ropes, telescoping handles and cylindrical grips, the contraction range of the new Bullworker has been expanded by 50% and the range of extension more than doubled. These improvements enable you to exercise more efficiently, add variety to your daily training program and benefit from a fitness workout tailor-made to your specific needs.

Requiring no more time or effort, the new full-range Bullworker X5 assures better fitness results than ever before.

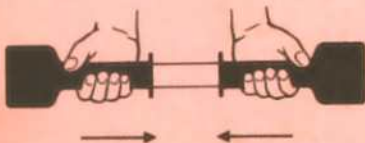
This book tells you how.



# Full-range

To obtain optimum results in increasing muscular strength, mobility and size, your muscles must be exercised over their full range of movement. Some muscles move over a wide range (shoulders, forearms); for other muscles the range is intermediate (abdominals, biceps) to short (chest, inner thighs). Some muscles respond better to contraction exercise (shortening the muscles), others to extension exercise (lengthening the muscles). Many muscles benefit from a combination of both types of training. The new full-range Bullworker X5 covers the complete range of fitness exercise: from large, sweeping extension movements to tight-in contractions. Its patented combination of double traction ropes, telescoping handles and cylindrical grips enables you to perform in-depth training in five different movement ranges, shows you how to concentrate your efforts where they will do the most good.

*inner range contractions  
from 15¼" to 0" (39 to 0 cm),  
using the cylindrical grips*



*outer-range contractions  
from 37" to 20" (94 to 51 cm),  
using the telescoping handles*

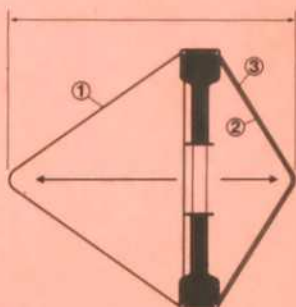
# Bullworker X5



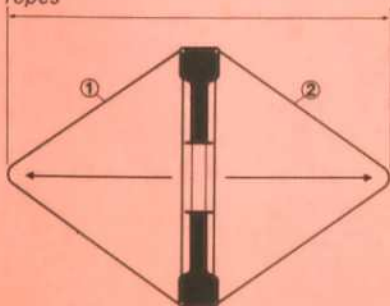
*short-range extension up to 31" (80 cm), holding 4 traction ropes*



*middle-range extensions up to 43" (110 cm), holding three traction ropes*



*full-range extensions up to 55" (140 cm), holding two traction ropes*





# The fitness story

Getting into fitness is exciting business and the rewards come fast. After about 4-5 workouts (see the 6-exercise introductory training program described on page 18), most men experience an exhilarating sensation of renewed fitness that is a real turn-on: muscles springing back to life, a powerful charge of energy coursing through your veins making you feel stronger, dynamic, raring to go, 100% alive again.

The explanation is simple: even after years of neglect, the muscles of your body retain their ability to react positively and rapidly to exercise.

Within two or three weeks, many Bullworker customers begin noticing the first improvements in their body: an inch or two more muscle on arms, shoulders and chest, an inch or two less flab around the middle.

That is only the first chapter of the fitness story.

After about three weeks of no sweat, no strain Bullworker training, you will find yourself performing with ease the full daily fitness program: 26 exercises which constitute a complete fitness workout for all the major muscle groups of your body.

That's when the training starts paying truly impressive, long term dividends. Finish out the month (one more week of daily fitness training), then check your progress and set the additional goals you want to achieve:

**Advanced fitness training.** It's like compound interest. You pyramid your fitness gains into all kinds of extra dividends: increased endurance, more stamina, better coordination, greater agility. Many Bullworker users are ready to tackle the advanced fitness training program described on page 26—get into isotonics and coordinated muscle group exercise—before the first month of training is out.

**Intensive training.** Out to train your body to peak performance levels, make a breakthrough in whatever sport you're into, develop a lithe, muscular physique that exudes power and athletic grace? The program for you is described on page 56.



**Specialized training.** Some part of your body that needs building up or trimming down? One shoulder that's a little lower than the other? Legs that look skinny in comparison to your torso? Discomfort in your lower back after a big night? Chest expansion limited to 2 or 3 inches? A lack of muscle definition in your thighs, abdominals, pectorals? Neck and shoulders that tend to slouch forward when you sit for long periods- an occasional stiff neck? See the training recommended on page 58.

**Maintenance training.** Among the many advantages of Bullworker fitness training, the ease of maintenance training is perhaps foremost. With most sports and fitness training programs, once you start cutting back on the workouts your performance falls off rapidly, muscle tone degenerates, and before you know it you're back to zero. With Bullworker, on the contrary, one single workout per week enables you to maintain your gains indefinitely. See page 55.

Each of these training programs is designed to let you progress at your own personal pace. If you want to step-up the training rhythm or slow it down, the program tells you how.

# What fitness is all about

Fitness means essentially using your body the way Nature intended. The name of the game is movement.

Watch a group of kids on a playground or even an infant in his crib. Stretching, pulling, pushing, bending, turning—the muscle play never stops.

Most men maintain a fairly active movement cycle throughout their teens and into their early twenties, then they suddenly begin slowing down. Yet they continue eating (and drinking) the same amount—and often a little more.

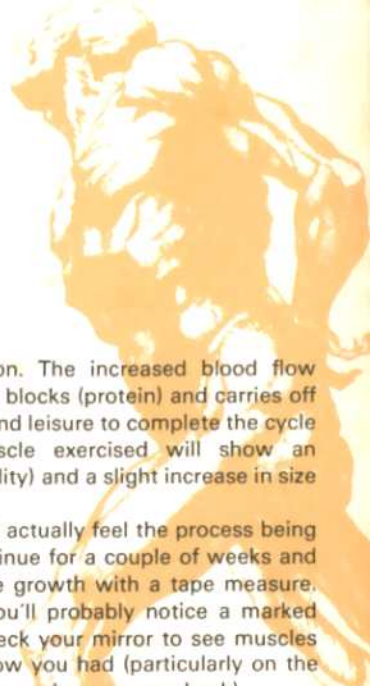
Changes in body measurements are gradual at first: an extra couple of inches around the middle, a slackening of muscle tone which shows up as mild flabbiness inside the thighs, on the chest and lower back.

But under the skin a chain reaction has been fused that spells trouble. As fat deposits form around muscle, the range of muscle movement is restricted. This means it takes more of an effort to move, so we tend to move even less and more fat accumulates.

Unless this process is reversed through exercise, the muscles begin to atrophy—slowly waste away to the point where their strength level is nil.

The same phenomenon occurs when muscles are immobilized in a cast for even a few weeks. Muscle tone is lost, then resilience and strength. It was during a research project for testing muscle re-education techniques that the amazing effectiveness of isometric/isotonic exercise was first discovered (see page 12). Scientists found that even after prolonged periods of neglect, the loss of muscle tone is reversible. Use your muscles to perform the right kind of exercise and they can regain resilience, increase in strength and mobility faster than you'd ever have thought possible. The physiological process is a very simple one. Exercise (extension and contraction) of the muscle breaks down the inefficient fatty





deposits and stimulates circulation. The increased blood flow engorges the muscle with building blocks (protein) and carries off the waste. Allow Nature the time and leisure to complete the cycle (while you sleep) and the muscle exercised will show an improvement in muscle tone (mobility) and a slight increase in size (strength).

Workout for 4 or 5 days and you'll actually feel the process being triggered off as you exercise. Continue for a couple of weeks and you'll be able to verify the muscle growth with a tape measure. After 6 to 8 weeks of training you'll probably notice a marked change in your body contours. Check your mirror to see muscles emerging that you didn't even know you had (particularly on the side chest, along the upper abdomen and across your back).

Even more important are the benefits in terms of long-term fitness—your longevity (how long you can expect to live), your resistance to illness (both mental and physical) and the fun you get out of life. As fitness levels improve, your heart functions more economically. The pulse rate slows down (giving your heart more rest between beats) and the pulsation grows stronger (increasing the efficiency of all the body processes: digestion, maintenance of healthy tissue, replacement of worn-out cells, muscle growth and the elimination of waste).

You feel better and you perform better—at work, at home, at play. You waste less time in hang-ups, hesitation, indecision. Physical and mental challenges turn you on because you enjoy putting your new found strength and mental alertness to the test. Some experts contend that after an initial investment of only six months in fitness training, you'll be so turned-on by the improvement in the way you look, feel and perform that you'll be "hooked" on fitness for life.

# Fitness and your age

There is no age limit for fitness. The only role your age plays is in setting the goals you can expect to achieve from fitness training.

## **Age 15 to mid-twenties**

Most young men who eat an adequate diet and participate in some sports activity can expect their levels of fitness, strength and physical performance to increase steadily up through their early twenties and then level off. Even in these formative years, however, there is a vast disparity in fitness levels.

Young men who participate actively in sports or perform regular fitness training frequently attain levels of strength, coordination, stamina and muscular development far superior to their contemporaries. This gives them a lifetime headstart, since a high level of fitness once attained is relatively easy to maintain or regain. Even the athlete who has let himself slip a little can rapidly reverse the process.

Late-bloomers, young men who don't get involved in sports or fitness training until late in their teens or early twenties, can close the gap quickly. Their initial gains are often spectacular. By persevering with the training, the late starter can expect to progress faster than the young man who is already near his peak and, in time, come close to matching him in performance.

*Your goal in this age group should be the coordinated development of all your major muscle groups. Avoid the temptation to concentrate on showy muscles or only those muscles which improve your performance in your favorite sport (your legs if you're into running or playing soccer; shoulders if tennis is your game, etc.). Compare the measurements on the right and left sides of your body. Many men are lopsided in their development. Now is the time to correct that tendency.*

Once a high level of fitness is attained, most young men in general good health can, by performing a regular training program (fitness workout or sports and fitness combined), maintain peak levels of fitness (usually reached at around 25) for the next fifteen years.

### **Late twenties and thirties**

Your body is fully matured now; your full physical capacities are at your disposal. The decision you make about fitness now will determine in large measure how long you retain your full physical potential and how fast you age. This is the age where you first notice that some of your contemporaries continue to look, act and perform like young men in their prime whereas others already show signs of growing old. In the next few years these differences will become even more pronounced.

If you were really fit a few years back, you should have no trouble in rapidly matching that level.

Allow two to three weeks to make the breakthrough. After that the sky's the limit. Within a month or so you should already be surpassing your fitness level of a few years back; after three months of training you can expect your body to be better developed than ever before—stronger and very close to your younger level of stamina. Thereafter, a moderate workout a couple of times a week should enable you to maintain your performance well into your early forties. Even if you've never been particularly athletic, you can still expect to attain a respectable level of fitness if you start now. Your progress in the first few weeks is likely to be spectacular. You may decide that these initial results are sufficient; maintaining them will be easy. With perseverance, however, continuing to train at your own pace over several months you can expect to match and even outclass the star performers of yesteryear.

*Your goal in this age group should be to increase your level of all-round fitness and maintain your full physical powers well into your early forties.*





## Over 40

At sometime around age 40, our physical capacities start to decline. No doctor will argue with that statement; no scientist has yet found a way to reverse the aging process. But there is one sure-fire method of slowing it down: maintaining a good level of fitness.

No one is surprised today to see men in their fifties, sixties (and older) with strong, athletic physiques and performance levels that many men years younger would have trouble matching.

*Research studies have proved that with adequate attention to fitness, performance levels of the 40-year-old can be maintained well into the sixties. The goal in this age group is to maintain a 40-year-old fitness level.*

If you've been keeping fit all your life, you know how it's done: regular, moderate, "complete" exercise. If you still have the chance to participate in an active sport, so much the better. If not, complete your fitness program with daily respiratory exercise (see page 15).

If you were fit when you were younger, get back into the habit of exercising regularly. No need to go all out: moderate, regular training is the key to long-term, permanent improvement. No sweat, no strain, no forcing.

After 2-3 weeks of Bullworker fitness training you'll already feel younger and peppier than you have in years. Continue training for a couple of months and then take stock of your progress. Training thereafter once or twice a week will enable you to maintain your results well into your sixties. Train more frequently and you will continue making improvement, as well.

If you've never made much of an effort to keep yourself in shape, it is not too late to start now. You should have no difficulty in performing the introductory training described on page 18. If the recommendations for the second and third weeks set a faster pace than you find comfortable, add the new exercises one by one when you're ready. Try to train every day, concentrating on the circulation training. Increasing your breathing capacity means added stamina and more energy. It may take you a little longer to attain the level of fitness you want, but each additional week you train will bring a marked improvement.

*No matter what your age, just a few minutes a day of Bullworker fitness training can help you attain and maintain a higher level of fitness, and this, in turn, means keeping you stronger, more powerful and virile, years after your contemporaries have become "old men".*

# Sport and fitness

When adults talk about sports participation, the list is generally limited to bowling, golf, squash, tennis, swimming and jogging. All are good for you, but in most cases give only limited rewards in fitness.

Bowling can improve coordination, but does little to increase muscle tone or build stamina. The benefits you get from playing golf depend a lot on how you play the game. If you carry your clubs and walk at a brisk pace, you get the plus of respiratory exercise. Tennis and squash are good for increasing agility, building endurance and improving the muscle tone of your legs, shoulders and arms. Swimming has a lot going for it provided you really swim (it's pitting your muscles against the resistance of the water that provides the benefits) either daily, or for a longer period twice a week. Jogging is great circulatory exercise with an important long term benefit: your body reacts to the effort by building an extra reserve of corpuscles which you can draw on as your original supply diminishes with aging. Neither swimming nor jogging, however, will improve the muscle tone of many of your major muscle groups nor increase flexibility (range of muscle movement). An ideal program is one which combines the benefits of exercise and sports. Bullworker fitness training increases muscular strength and flexibility. This means better sports performance. When your game improves, when you run or swim better, you put more into the sport and the rewards you reap increase proportionately.

## **SOME SENSIBLE ADVICE:**

– If you have not had a check-up recently—or if you have a health problem—you should check with your family doctor before engaging in any program of exercise or strenuous

sports activity.

– If at any time while exercising or participating in sports you experience chest pain, stop the activity, rest and inform your family doctor.



# Isometrics: maximum muscle growth in 7 seconds a day

Even prehistoric man observed that muscles grow in size and strength with use, but it was not until the turn of the century that scientists began to enquire into the how and the why of the process. In 1887 Professor Morpurgo discovered in experiments conducted at the University of Siena, Italy, that increases in the strength and size of muscles result from the growth of existing muscles rather than from the formation of new muscles.

In 1905 W. Roux postulated the basis of the theory (later refined and documented by scientific observation) on which all systems of exercise are based, the "overload theory": muscles grow only when exerted with greater than normal intensity.

The most significant breakthrough in our time resulted from a series of more than 200 experiments conducted over a ten year period by Drs. E. A. Müller and Th. Hettinger in the Max Planck Institute in Dortmund, Germany: the discovery that maximum muscle growth can be attained by exerting 60% of existing muscle strength against a superior resistance for just 7 seconds once a day. This remarkable exercise technique is called isometrics (where the exercise is performed throughout the range of muscle movement, it is called isotonics; see instructions on page 57). These experiments documented the fact that isometric exercise increases strength by up to 4% per week (a few of the subjects tested even averaged gains of 5% per week). Optimum results are attained with 5 workouts per week, but even a single weekly workout is sufficient to maintain the improvements attained.

Professor James A. Baley put isometrics to the test with a class of college students at the University of Connecticut. The isometric training group improved **three times faster** than the sports training group on tests measuring increases in strength, endurance, coordination and agility.

The first isometric training equipment was cumbersome, complicated to operate and prohibitive in cost. A number of rudimentary isometric training devices have been offered to the general



*Gert F. Kölbel, inventor of the Bullworker.*

public: rollers, outsized clothespins, rope pulleys and the like, but their effectiveness was, at best, limited to a few muscles.

It remained for inventor Gert F. Kölbel to develop an isometric trainer which could be used for both contraction and extension movements, with a range of use covering all of the major muscle groups, which was light in weight, compact in size and which could be produced at a cost fitness-conscious men could afford to pay.

The first Bullworker was introduced in Germany in 1963 to the unanimous acclaim of athletes, coaches, sports doctors and physiotherapists. (The German Olympic team was the first to prove its effectiveness in improving sports performance.) The rest is history. Bullworker has become synonymous the world around with fitness training. More than five million have already been sold. Over the years, Gert F. Kölbel has continued to improve both the exerciser itself and the training program. The Full-range Bullworker X5 described in this booklet is the end product of more than 15 years of research and testing.



# Better breathing

Most of us have become pretty sloppy about the way we breathe. We use only part of our lung capacity and cheat our bodies on oxygen intake. If you let yourself fall into the habit of sitting with your shoulders slouched forward and your gut bulging out, your chest capacity is so restricted that you can only breathe in short, rapid, inefficient breaths. If you smoke as well, chances are your lungs have forgotten the tingling sensation that follows a deep intake of oxygen.

Lung power tends to decline at the rate of about 1% a year from age 20 on. But men who exercise regularly retain greater lung power than those who don't. Tests conducted on a group of middle-aged men who performed endurance exercise three times a week over a ten year period showed that they were able to reverse this symptom of the aging process: instead of declining, their lung power actually increased by 18% on the average.

Try this simple breathing exercise. Stand, bending forward from the waist with your hands hanging down in front of your knees. Now inhale slowly and deeply as you raise your torso upright, shoulders well back, chest held high. Then slowly exhale, expelling the stale air right down to the last puff. Unless you're in pretty good shape, you will probably feel slightly "high" from the oxygen intake.

Slowly inhale and exhale as you perform each exercise in the training program. Slowly inhale and exhale whenever you feel fatigue, nervous tension or anxiety.

As your level of fitness improves, slower, deeper breathing which feeds more oxygen into your lungs and bloodstream will become automatic and natural for you.



# Your fitness diet

We all have to eat to provide the energy we expend in normal daily activity: tissue growth, breathing and heartbeat to keep our bodies functioning plus muscle activity for work and play. The goal of fitness nutrition is to provide a balanced diet containing adequate amounts of proteins, vitamins and minerals together with a caloric content which is equal to—but not in excess of—our energy output.

Recent research indicates that getting into fitness tends to normalize hunger, diminishing the desire to overeat in people who are overweight, while stimulating the appetites of underweight people.

A good fitness diet should include plenty of protein foods (meat, fish, poultry, eggs, milk, cheese, hard vegetables like kidney beans and lentils), a daily intake of salad and vegetables (raw or lightly cooked), fruit or fruit juice and some roughage (like bran). For extra energy rely on natural starches (like potatoes and cereals) rather than sugary foods or packaged products. Drink plenty of water (2 to 3 pints a day). Cut way back on alcoholic beverages. They have practically no nutritional value, they make you fat, they reduce gastric secretion and irritate your stomach.





# Putting it all together

After only a few Bullworker workouts you will already feel your body's grateful reaction to the training. Within two or three weeks many users begin noticing the physical changes in their bodies as well. Improved muscle tone, greater strength, better circulation, a healthier-looking appearance. Continued training will accentuate these results and add important gains in endurance, agility and coordination as well.

But only you can put it all together.

When, a few days from now, you feel that first exhilarating surge of new energy, cash in on it by making a firm commitment to improve your fitness life-style: eat a better diet; cut down on smoking and drinking; fix a regular daily routine for mealtimes, exercise and sleep; get more sports activity, even if it only involves walking short distances rather than taking the car.

As your muscles strengthen and grow, get in the habit of sitting and standing with your shoulders back, your chest held high. When you walk, swing your arms a little, lengthen your step, pull in your stomach so that your hips pivot slightly thus using those toned-up calf, rear-thigh, buttock and abdominal muscles. Then begin speeding up the pace. Walk up and down stairs whenever you get the chance, then begin taking them two at a time. Try some new kind of sports activity. Snorkeling, scuba diving or wind-surfing if you like water sports. Squash, table tennis, handball, cross country skiing, jogging or walking-jogging. All of these are sports you can have a lot of fun with even as a beginner.

Once you get it all together you'll find your whole life-style changing: more interest, spice, variety and fun in everything you do. That is pretty heady stuff, but get into fitness and you'll see how fast it happens.

# Introductory training

Five easy-to-follow tips to assure maximum results fast.

1. Take your measurements now before performing even the first exercise. You are going to be amazed by the changes in your body in the next few weeks, and we want you to have the proof in writing. Write in your present measurements on the chart, page 27.
2. During the next five days perform the circulation exercise shown opposite, plus the six basic exercises only. Do not jump the gun. The key to maximum success is to start out slowly, to improve the quality of your performance every day and to train regularly.
3. Perform each exercise **exactly** as described and illustrated. (Train the first few times in front of a mirror, if convenient.) Concentrate on performing each exercise so you feel the effect on the muscle group specified. **DO NOT STRAIN:** 60% to 70% of your present strength is all it takes to achieve maximum results. If your arms or legs tremble that means you are forcing too hard.
4. Do not rush the training. Check the timing of each hold with a watch with a second hand. Apply the pressure for a full 7 seconds.
5. Perform these basic exercises once each day for 5 or 6 days in a row. You should train every day, preferably at the same time of day. Any time is fine, except that you should not train right after eating a big meal.

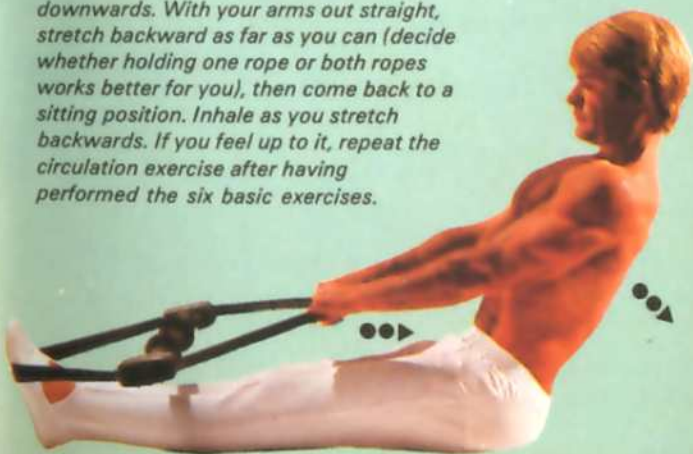
After performing each exercise, write in the Power Meter reading on the chart, then move the red marker back to the starting position. Not all of your muscles will increase at the same rate, but by the end of the second week you can probably expect to have achieved an average strength increase of around 10%, perhaps even more.

## Circulation training

Perform a warm-up exercise at the beginning of each training session. To obtain maximum circulation benefits, perform the exercise briskly and continue until your heart beat is up around 120 beats per minute (you can check your pulse rate against a watch with a second hand: 20 or so beats per 10 seconds is about right). This will probably take 20 to 30 repeats at the outset, a few more as your level of fitness improves.

Training day	1	2	3	4	5	6	7	8	9	10
Exercise 1										
Exercise 2										
Exercise 3										
Exercise 4										
Exercise 5										
Exercise 6										

*Sit on the floor with your feet through both ropes on the far side of the Bullworker. With both hands, grasp one (or both) traction ropes, hands facing downwards. With your arms out straight, stretch backward as far as you can (decide whether holding one rope or both ropes works better for you), then come back to a sitting position. Inhale as you stretch backwards. If you feel up to it, repeat the circulation exercise after having performed the six basic exercises.*



## 1-Upper arms (and forearms)



*Stand with your weight forward on your right foot. Grasp the upper cylindrical grip with your left hand, palm facing outward, and the lower cylindrical grip with your right hand, palm facing inward, at waist height. Take a deep breath and push upward with your right hand while counting slowly out loud from 1 to 10.*

*Repeat the exercise with your left hand (left foot forward, right hand on upper grip, left hand pushing upward on lower grip).*

*(See **page 65** for isotonic instructions)*

## 2 - Shoulders (and upper back)



*Step on one outer rope with one foot (either foot). With both hands, grasp the outer rope on the other side of the Bullworker, palms facing downward. Stand up straight. Take a deep breath, pull in your stomach and with your elbows bent, pull the rope upward along your body with your forearms, while counting slowly out loud from 1 to 10.*

(See **page 70** for isotonic instructions)



### 3 - Legs



*Sit down and insert your feet between the tube of the Bullworker and the traction ropes. Sitting well back in a chair, extend your legs out in front of you. Take a deep breath, pull in your stomach and push outward with your feet while counting slowly out loud from 1 to 10.*

(See **page 90** for isotonic instructions)

## 4 - Back



*Sit on the edge of a chair with one handle of the Bullworker resting on your knee (either knee). Grasp one of the outer ropes in each hand. Take a deep breath, pull your stomach in and pull down and outwards on the ropes while counting slowly out loud from 1 to 10.*

*Practise this movement until you feel the exertion in your back.*

(See **page 83** for isotonic instructions)

## 5 - Abdominals (and chest, legs)

*Starting position*



*End position*



*Kneel on the floor with one handle of the Bullworker resting against the front of your knees. Lean forward and grasp one outer rope only in each hand. Take a deep breath, pull your stomach in and pull the ropes toward you while counting slowly out loud from 1 to 10. If the Bullworker restricts the full range of movement, flip it over so that the opposite handle rests against your knees.*

*Perform this movement so you feel the exertion in your abdominals not your shoulders.*

*(See page 76 for isotonic instructions)*

## 6 - Chest



*Stand with your feet about 12" (30 cm) apart. Grasp both handles, with your left arm fully extended, and your right hand positioned in front of the right side of your chest. Take a deep breath and push inward with your right hand while counting slowly out loud from 1 to 10.*

*Repeat the exercise with your left hand positioned in front of the left side of your chest.*

(See **page 60** for isotonic instructions)

# Daily fitness training

A "week of training" consists of 5 workouts during a 7 day period. If you miss a day or two during the week, make it up on the weekend. If you do not train for 3 days in a row, start the training week over again from the beginning.

## **Second and third weeks of training**

During the next two weeks, continue performing a warm-up (circulation) exercise (see page 48 for choice) plus the 6 basic exercises and add 2 new exercises to your workout every day. The first day you should perform 8 exercises (the 6 basic exercises plus the 2 new ones), the second day you should increase to 10 exercises, and so on. The new exercises are designed to be performed in pairs, so add 2 at a time, rather than 1 or 3. (If this pace tires you, add 2 new exercises whenever you feel ready to tackle them.) After each training workout, repeat the circulation exercise twice, resting between performances until your pulse beat drops back down to normal.

## **Fourth week of training**

You should be performing a warm-up exercise, the 26 daily fitness exercises plus two repeats of the circulation exercise. Continue performing this program for one week, then take your measurements. Amazed that such an easy program could produce positive results so fast? Believe us, that's just the beginning. The next month or two of training can bring results which will really astound you.

## **Advanced training: fifth week and thereafter**

Beginning about the fifth week of training, your level of fitness should be high enough for you to put on some steam if you want to (see Intensive training, page 56) or concentrate on specific muscle groups (see Specialized training, page 58) or considerably raise your general fitness performance, as explained below.

Even the best training program performed in the same manner for more than a month becomes automatic and boring. Make an effort to modify your workout every few weeks by substituting alternate exercises and performing some of the exercises isotonicly.



The daily training program consists of 6 basic exercises plus 10 pairs of exercises. There are alternatives described for 7 of these pairs on the following pages. Follow the standard program for a couple of weeks, then switch to the alternatives, then train by performing a mixture of the standard and alternative exercises.

Isotonic training builds endurance in addition to strength. All Bullworker exercises can be performed isototonically, but the most effective are those which involve a good range of movement: Nos. 2-5, 8, 13-21, 24-26 and nearly all of the alternative exercises.

To exercise isototonically, slowly exert the effort and slowly relax the pressure six times, maintaining the exertion for 7 seconds on the last repeat only. Vary your program by performing a half dozen of the exercises isototonically for a couple of weeks (continue to perform the others in the normal isometric manner), then perform six different exercises isototonically for the next two weeks, etc.

### Training cycles

When you first tackle Bullworker fitness training, you should continue to train daily for at least two months, and preferably three. (If you want to persevere with daily training for a longer period, so much the better.) After your initial training cycle, cut back to maintenance training for a month or so (see page 55), before starting to train daily again. It is up to you to work out your own personal schedule, but an effective yearly training plan should probably include a period of daily training during the Winter, in the late Spring and after Summer with maintenance training in between.

### Personal progress chart

All measurements are in circumference: the distance around your shoulders at the widest part, around your biceps (flexed), around your chest (inflated), etc. Men come in all shapes and sizes, but some indications are valid for most of us. Your chest (inflated) should measure more than your hips. Your biceps should be as big as your calves and both should be pretty close to your neck measurement. Your thighs should measure about 50% more than your calves.

	Neck	Shoulder	Chest	Biceps	Waist	Thighs	Calves
Before training							
After 2 weeks							
After 4 weeks							
After 2 months							
After 3 months							

## 7 - Chest (and forearms)



*Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker at hip level, an inch or two (3-5 cm) in front of your body. Take a deep breath and push inward on the two handles while counting slowly out loud from 1 to 10. At the outset, you will hardly be able to move the handles at all. This is unimportant. You are contracting your lower chest muscles, which is the aim of the exercise.*

*As your muscles become stronger, you will find the exercise progressively easier to perform. To increase the effectiveness, hold the Bullworker progressively further away from your body (but always at hip level) until you are performing the exercise with your arms fully extended.*

*(See **page 61** for isotonic instructions)*

## 8 - Upper arms (and forearms)

*Stand with your feet on top of one of the exterior traction ropes. Grasp the exterior rope on the other side of the Bullworker near the center with both hands, palms facing upward and stand up. Take a deep breath and pull up with your forearms while counting slowly out loud from 1 to 10.*

*Your upper arms should remain stationary during the exercise.*

(See **page 66** for isotonic instructions)



### Alternative

*Sit on the edge of a chair with your right foot over one pair of traction ropes. Grasp one rope only near the center with your right hand. Pull up on the rope while counting slowly out loud from 1 to 10.*

*Move only your forearm; your upper arm should not move.*

*Perform the exercise on the left side of your body.*

(See **page 68** for isotonic instructions)



## 9 - Chest



*Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker at chest level. Take a deep breath and push inward with both hands while counting slowly out loud from 1 to 10.*

(See **page 61** for isotonic instructions)



## 10 - Chest (and forearms)



*Stand with your feet about 12" (30 cm) apart. Grasp the Bullworker by the inner grips, fingers facing downward, and position it at shoulder height. Take a deep breath and slide the two grips toward each other while counting slowly out loud from 1 to 10.*

*(See page 62 for isotonic instructions)*

## 11-Back



*Stand with your feet about 12" (30 cm) apart. Grasp both handles and position the Bullworker behind you, arms held straight. Take a deep breath, pull your stomach in and press the two handles together while counting slowly out loud from 1 to 10.*

*At the outset, you may not be able to move the handles at all. This is unimportant, provided you feel the effect of the exercise in your upper back.*

(See **page 83** for isotonic instructions)

## 12-Back (and shoulders)

*Stand with your feet about 12" (30 cm) apart. With each hand grasp one traction rope, your hands facing inward. With your arms at shoulder height, hold the Bullworker in a vertical position. Take a deep breath and pull outward on the ropes while counting slowly out loud from 1 to 10.*

(See **page 84** for isotonic instructions)



### Alternative

*Stand with your weight poised on your left foot and your left hand holding one handle of the Bullworker on top of your left thigh. Leaning forward from the waist, grasp the other handle with your right hand, your right arm fully extended. Take a deep breath, pull in your stomach and push down with your right hand while counting slowly out loud from 1 to 10.*

*Repeat the exercise on the other side of your body.*

(See **page 86** for isotonic instructions) 33

## 13 - Back (and shoulders)



*Stand with your feet about 12" (30 cm) apart. With each hand grasp two traction ropes near the center, your hands facing inward, and position your arms at shoulder level. Take a deep breath and pull outward on the ropes while counting slowly out loud from 1 to 10.*

*(See **page 84** for isotonic instructions)*



## 14- Back (and shoulders)

*Stand with your feet about 12" (30 cm) apart. Grasp two traction ropes near the center with one hand and one traction rope near the center with the other hand, your hands facing inward. (It is immaterial which hand holds two ropes and which hand only one). With your arms positioned at shoulder height take a deep breath and pull outward on the ropes while counting slowly out loud from 1 to 10.*

(See **page 85** for isotonic instructions)



### Alternative

*Step on one pair of traction ropes, your feet spaced about 12" (30 cm) apart. Grasp one traction rope with both hands, hands facing inward. Take a deep breath and with your weight poised forward on the balls of your feet, your head held high, your back straight raise your body to an upright position while counting slowly out loud from 1 to 10. Keep your hands in front of your legs throughout the exercise. Perform the exercise so you feel the exertion in your lower back.*

(See **page 87** for isotonic instructions)



## 15 - Abdominals



*Stand with your heels together, one handle of the Bullworker held securely between your feet. Resting both hands on the upper handle, bend forward from the waist. Take a deep breath, pull in your stomach and press down on the Bullworker while counting slowly out loud from 1 to 10. Keep your legs, back and arms straight so that you feel the exertion in your abdominals, not in your shoulders.*

(See **page 77** for isotonic instructions)

## 16 - Abdominals

*Kneel on the floor with one handle of the Bullworker resting against the front of your knees. Grasp the other handle of the Bullworker with both hands, your arms stretched out straight. Take a deep breath, pull in your stomach and press down on the Bullworker while counting slowly out loud from 1 to 10. Keep your arms and back straight and concentrate on exerting the effort with your abdominals.*

(See **page 77** for isotonic instructions)



### Alternative

*Sit on the edge of a chair with one handle of the Bullworker resting against your right knee. Grasp two traction ropes in each hand and hold the Bullworker in a vertical position. Take a deep breath, pull in your stomach and lift your right leg pushing up against the Bullworker with your knee while counting slowly out loud from 1 to 10. Use your arms only to hold the Bullworker in position; exert the effort with your knee. Repeat the movement on the left side of your body.*

(See **page 81** for isotonic instructions)

## 17 - Abdominals



*Kneel on the floor, sitting back on your heels, with one handle of the Bullworker resting against the front of your knees. Grasp the upper cylindrical grip with both hands, your hands facing inward. Take a deep breath, pull in your stomach and press down on the Bullworker while counting slowly out loud from 1 to 10.*

*Keep your arms and back straight and concentrate on exerting the effort with your abdominal muscles.*

(See **page 78** for isotonic instructions)



## 18- Abdominals

*Sit on the floor with one handle of the Bullworker nestled between your ankles. With each hand grasp two ropes near the top of the Bullworker, fingers facing downwards, your arms held straight out. Take a deep breath, pull your stomach in and push down on the ropes while counting slowly out loud from 1 to 10.*

*Perform the movement slowly; do not jerk down on the ropes. This exercise accentuates the cords of muscle which sheathe your front and side stomach.*

*With intensive training you will see the relief of an old-fashioned washboard developing just below the surface of your skin.*

(See **page 78** for isotonic instructions)



### Alternative

*Kneel with one handle of the Bullworker resting against the side of your right knee. Grasp two traction ropes in each hand, your arms stretched out straight. Keep your abdomen facing forward; do not twist your trunk toward the right. Take a deep breath, pull your stomach in and push down on the ropes while counting slowly out loud from 1 to 10.*

*Perform the movement slowly; do not jerk down on the ropes. Repeat the movement on the left side of your body.*

(See **page 79** for isotonic instructions)



## 19 - Legs

*Step on both traction ropes on one side of the Bullworker and grasp the other two ropes, hands facing down, about 12" (30 cm) apart. Bend your knees until your thighs are parallel to the floor. Take a deep breath and raise your body as high as you can while counting slowly out loud from 1 to 10.*

*Keep your arms straight throughout the exercise; the effort should be exerted by your thighs not your arms.*

(See **page 90** for isotonic instructions)



## 20 - Legs



*Sit down and slip your left foot over both traction ropes on one side of the Bullworker. Grasp the other two ropes with both hands, palms facing downwards, and sit well back in the chair. Take a deep breath, pull in your stomach and push out with your left leg while counting slowly out loud from 1 to 10. Repeat the exercise with your right leg.*

*(See page 91 for isotonic instructions)*

## 21- Back (and shoulders)

*Stand with your feet about 12" (30 cm) apart. With each hand grasp two traction ropes near the center and position the Bullworker at the right of your body, your hands at shoulder height. Take a deep breath and pull the two ropes apart like a bow while counting slowly out loud from 1 to 10.*

*Repeat the exercise on the left side of your body.*

*(See page 70 for isotonic instructions)*



### Alternative

*Stand with your feet about 12" (30 cm) apart. Grasp the two cylindrical grips, palms facing downward and hold the Bullworker behind your head. Take a deep breath and push the grips together while counting slowly out loud from 1 to 10.*

*(See page 73 for isotonic instructions)*

## 22 - Chest



*Stand with your feet about 12" (30 cm) apart. Grasp the Bullworker by the inner grips, fingers facing upward, and position it at shoulder height. Take a deep breath and slide the grips together while counting slowly out loud from 1 to 10.*

*This exercise accentuates the individual definition of the muscles which lift, broaden and arch your chest.*

(See **page 62** for isotonic instructions)



## 23 - Shoulders (and chest)

Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker above your head. Take a deep breath and push inward with both hands while counting slowly out loud from 1 to 10. When you first perform this exercise hold the Bullworker only a couple of inches (about 5 cm) above your head. As your muscles strengthen, hold the Bullworker progressively higher.

*This exercise is particularly effective for strengthening the muscles which link the chest and shoulders.*

(See **page 63** for isotonic instructions)



### Alternative

Stand with your feet about 12" (30 cm) apart. Grasp one handle in each hand and hold the Bullworker behind your head. Take a deep breath and push the handles inward while slowly counting out loud from 1 to 10.

*This is a fantastic exercise for the outer shoulder muscles (deltoids).*

(See **page 74** for isotonic instructions)

## 24 - Legs

*Sit on the edge of a chair. Grasp the two cylindrical grips, palms facing downward, with the Bullworker held just below knee level, your forearms resting on the inside of your knees. Take a deep breath and press your knees inward against your forearms while counting slowly out loud from 1 to 10. Do not exert pressure with your arms.*

(See **page 91** for isotonic instructions)



## 25 - Upper arms



*Grasp the two traction ropes with your right hand, palm facing upwards, and two ropes with your left hand palm facing downwards. Raise your right hand to shoulder height. Take a deep breath and push down with your left hand while counting slowly out loud from 1 to 10. Your right hand should remain stationary. Repeat the movement with your left hand grasping the upper ropes and your right hand the lower ropes.*

(See **page 66** for isotonic instructions)

## 26 - Back



*Kneel on the floor and sit back on your heels with one handle of the Bullworker resting against the front of your knees. Keeping your back erect, grasp one of the outer ropes in each hand. Take a deep breath, pull in your stomach and pull downward and outward (see photo) while counting slowly out loud from 1 to 10. If the Bullworker restricts movement, flip it over so that the opposite handle is resting in front of your knees. Perform this exercise so you feel the exertion in your back, not in your shoulders.*

(See **page 85** for isotonic instructions)

# Circulation training

One of the most important benefits of raising your level of fitness is a more efficient use of your heart and lungs. Statistics show that the hearts of people who are out of shape beat faster than those of people who keep fit: 20 more beats per minute to sustain easy activities like lying down and standing up, 70 more beats per minute to climb stairs.

Your heart responds to exercise like any other muscle.

The aim of the training described below is to increase your pulse rate to a level of about 120 beats per minute and then let it drop back down around normal **three times** during each daily workout. After a couple of weeks you will find that it takes more effort for you to get your pulse rate up to the desired level; this is good news and demonstrates that your levels of endurance and stamina are on the rise.

Perform one circulation exercise as a warm-up exercise before you start your daily workout and perform the exercise twice more at the end of the workout. Use any of the exercises illustrated on the following pages.

When you get into isotonic training (see page 57), you will probably find that after performing a few isotonic exercises in a row your pulse rate is at the desired level. When this happens, drop the circulation exercise at the end of the workout. Three up-to-120-beats then back-down-to-normal cycles per workout provide maximum benefits from this type of training.

**A recommendation from the National Heart Association:** if you have not exercised at all in the past year or if you are over 35, you should have

a physical check-up, including cardiovascular stress tests, before engaging in any exercise program or strenuous sports activity.



*Sit on the floor with your feet through both ropes on the far side of the Bullworker. With both hands, grasp one (or both) traction ropes, hands facing downwards. With your arms straight out, stretch backward as far as you can (decide whether holding one rope or both ropes works better for you), then come back to a sitting position. Inhale as you stretch backwards.*

*Repeat rapidly and rhythmically 20-30 times until your pulse is up to around 120.*





*Kneel with your knees on top of both traction ropes on one side of the Bullworker. With both hands grasp the exterior rope only, your palms facing downward. Raise your forearms until the back of your hand touches your chin. Complete the movement by stretching your arms straight downward so they touch the Bullworker. Repeat rapidly and rhythmically 20-30 times until your pulse is up to around 120 beats per minute (20 beats every 10 seconds). Inhale while pulling the rope upward.*



*Kneel with one handle of the Bullworker nestled against the front of your knees. Maintaining your body in a straight line from your shoulders to your knees, grasp one outer rope in each hand. Pull outward on the ropes, then relax the effort. Repeat rapidly and rhythmically (do not jerk the ropes outward) 20 to 30 times until your pulse rate is up to around 120 beats per minute (20 beats every 10 seconds). Inhale when pulling outward.*

*Stand with your feet on top of the traction ropes on one side of the Bullworker. Grasp the other two ropes, hands facing down, about 12" (30 cm) apart. Bend your knees all the way down then straighten back up as far as you can. Repeat rapidly and rhythmically 20 times or so until your pulse is up to around 120 beats per minute. Inhale when you straighten up. Keep your arms straight throughout the movement; exert the effort with your legs, not with your arms.*





*Stand with your heels together, one handle of the Bullworker held securely between your feet. Resting both hands on the upper handle bend forward from the waist. Push down the handle, then relax the pressure. Repeat rapidly and rhythmically until your pulse rate is up around 120 beats per minute. This exercise is a little tricky: you must keep your arms, legs and back straight (especially your back) so that the abdominal muscles are doing the work, rather than your arms and shoulders. When you get it right, it's an extremely effective method for getting rid of a pot belly...*



*Sit on the floor with one handle of the Bullworker nestled between your ankles. Grasp two ropes in each hand near the top of the Bullworker, palms facing downward. Holding your arms straight, push down on the ropes, then relax the pressure. Repeat rapidly and rhythmically until your pulse rate is up to around 120 beats per minute. Inhale as you push down on the ropes.*



# Maintenance training

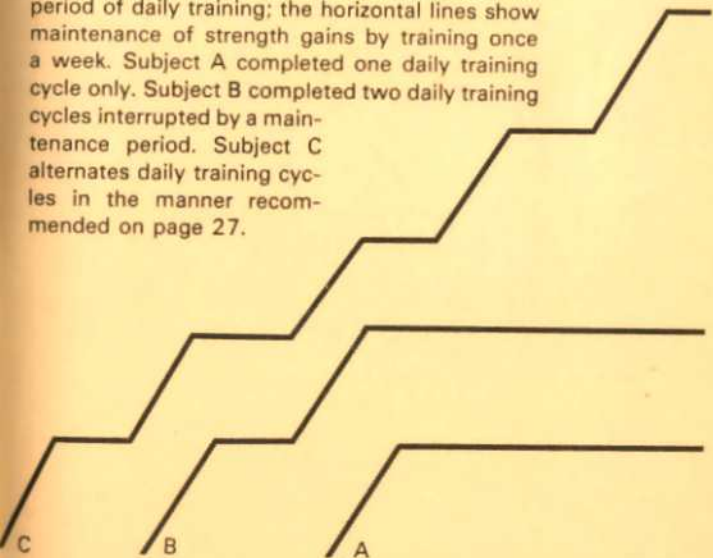
One of the major advantages of isometric-isotonic training is that it's so easy to maintain the fitness gains you make. With many other methods and sports training, the minute you cut back on training your performance levels start to fall off sharply. After a few months you're back to point zero fitnesswise.

A single weekly Bullworker fitness workout is all it takes to keep your muscles toned-up: strong, hard and resilient.

What's more, if at a later date you begin working out daily again, you can expect to make new gains in fitness at the same rapid rate you did when you first started training and you can maintain these higher levels by working out just once each week.

Circulation exercise becomes an increasingly important factor in maintaining fitness as you grow older and should be practised 2 or 3 times a week.

The diagonal lines show strength gains during the period of daily training; the horizontal lines show maintenance of strength gains by training once a week. Subject A completed one daily training cycle only. Subject B completed two daily training cycles interrupted by a maintenance period. Subject C alternates daily training cycles in the manner recommended on page 27.



# Intensive training

Your age is an important factor in determining the goals you want to achieve with Bullworker fitness training.

## **Age 15 to early twenties**

Your goal in this age group should be the coordinated development of all your major muscle groups. Your body will not reach full physical maturity for several more years. Trying to attain peak muscular development now will be frustrating for you; your body is not yet ready for it.

If you want to step-up the pace of your training program, get into isotonic training (see box). After having completed four weeks of training, start performing 10 of the exercises isotonically, then 20 and finally all 26. Then substitute the alternative exercises. In the final cycle, perform two isometric series for each exercise. Spread out over 5 months, your intensive training plan is as follows:

1st to 4th week: as explained on pages 18, 26

5th to 8th week: 16 isometric, 10 isotonic exercises

9th to 12th week: 6 isometric and 20 isotonic exercises

13th to 16th week: 26 isotonic exercises

17th to 20th week: 26 isotonic exercises (perform alternate exercises).

21st to 24th week: two isotonic series each of all 26 exercises.

Then switch to maintenance training for a couple of months. When you start working out daily again, train isotonically.

Complement your fitness training with lots of sports activity, including at least one active sport like jogging, swimming, squash, tennis, soccer, etc.

## **Mid-twenties to early thirties**

You are at the peak biological age with your full physical capacities at your disposal. The decision you make about fitness now will determine in large measure how long you retain your capacities and how fast you age.

This is an ideal age for intensive training. After four weeks of training start performing the exercises isotonically (see box). After a month of isotonic training, start performing two isotonic series for

each exercise at least three times a week, five times a week if you have the time. Your initial Bullworker fitness training cycle should last three full months (a few weeks longer if you like), followed by maintenance training for a month, then another 10 weeks of isotonic training, and so on.

Sports can do you a lot of good, too. The important thing is to fix a regular sports participation schedule you can stick to even during the winter months. Try to fit in two sports workouts each week: swimming, tennis, handball, squash, table tennis are all excellent.

### **Middle thirties and older**

The level of fitness you attained in earlier years is much more important than your age in determining how high you can now expect to raise your performance levels.

Get into isotonic training (see box). Replace isometric performance by isotonic performance gradually, at the pace that is comfortable for you. When you can perform all 26 exercises isotonically, start repeating the exercises for your lower back, abdominals and legs. Three times a week, at first. Then 5 times a week. Then perform 2 isotonic series of all 26 exercises.

Your first training cycle with Bullworker should last at least 8 weeks and 12 weeks is better. Then switch to maintenance training for a month or two before starting a new training cycle.

After 45, try to train 2-3 times a week throughout the year. Get into the habit of regular sports activity, preferably some active sport even if you play at a slower pace than you used to: tennis, volleyball, bicycling, walking-jogging, swimming. Fill-out the schedule with less demanding sports like golf and bowling as often as you can. Walk up stairs when you get the chance, walk instead of riding, walk at a brisk pace rather than strolling.

### **ISOMETRIC EXERCISE**

**Perform one 7-second isometric hold for each exercise once a day to attain maximum gains in muscle tone and strength.**

### **ISOTONIC EXERCISE**

**Perform a series of 6-8**

**repeats, slowly exerting and relaxing the pressure. Hold the pressure on the last repeat for 7 seconds. Performance of a second series will accelerate your results. Isotonic training gives extra benefits in endurance, stamina and muscle coordination.**



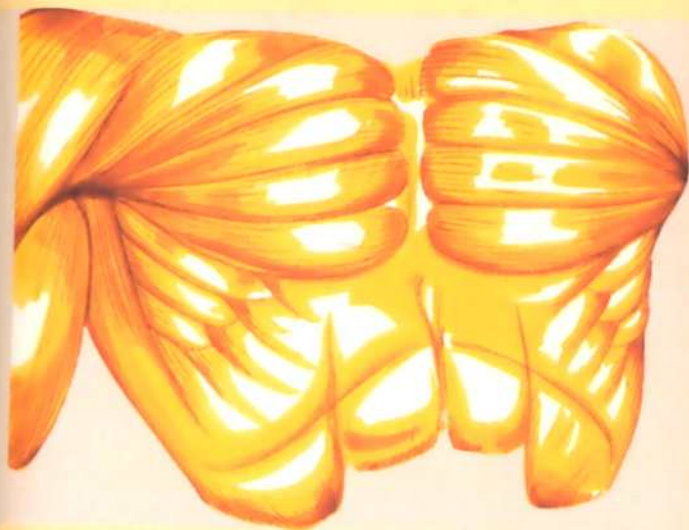
# Specialized training

Most men have one or two muscle groups they particularly want to build up or trim down. Teenagers are keen on bulging biceps. Men in their early twenties notice their shoulders broadening and their chest deepening and should reinforce this development. From the thirties on, many men begin developing pot bellies they ought to get rid of. After 40, keeping the back muscles strong and resilient is particularly important.

In this section you will find a program of specialized exercises for each of your major muscle groups. Some are new exercises; others are taken from the daily fitness training program, but should now be performed isotonicly (as described on the following pages). For maximum effectiveness, perform specialized training three times a week **in addition to** daily fitness training.



# Chest



Your primary aim should be to expand the volume of your rib cage thus increasing your lung capacity. Your lungs will automatically fill out the expanded area. Breathing normally, most people inhale only about  $\frac{3}{4}$  pint (0.5 liters) of air. Normal capacity is about 2 pints (1.3 liters). Your goal should be to considerably expand that capacity, to breathe more deeply and slowly, thus feeding more oxygen into your lungs and blood stream.

Collaterally you should emphasize development of the broad back muscles (latissimus dorsi). (See page 82) Finally, reinforce the development and definition of the pectoral muscles. Chest measurements expand quite rapidly in response to exercise. Increasing the thickness of the muscles which sheathe the front of your chest and accentuate muscle definition takes a little longer.

On the days you perform specialized training for your chest muscles, each of the following exercises replaces an exercise in the daily fitness training program, as indicated.

## 27 - Chest - left and right sides

(secondary effect: biceps and forearms)



(replaces Exercise 6 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the two handles, with your left arm fully extended, and your right hand positioned in front of the right side of your chest. Take a deep breath and push inward slowly with your right hand. Then relax the pressure. Repeat 6 times maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise with your left hand positioned in front of the left side of your chest.*

*Perform a second series of repeats on both sides.*

## 28 - Lower chest, chest and forearms

(secondary effect: biceps)

(replaces Exercise 7 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker at hip level, an inch or two (3-5 cm) in front of your body. Take a deep breath and push inward slowly on the two handles, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 29 - Middle chest

(secondary effect: biceps and forearms)

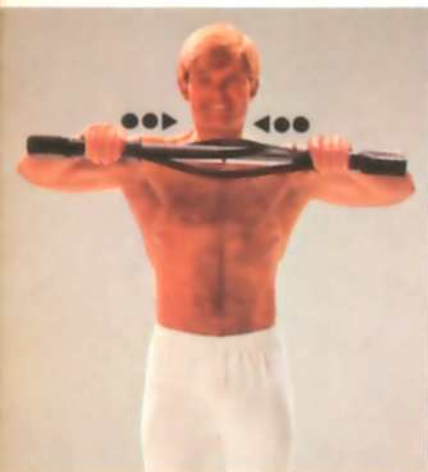


(replaces Exercise 9 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker at chest level. Take a deep breath and push inward slowly with both hands, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

## 30 - Upper chest and forearms

(secondary effect : shoulders)



(replaces Exercise 10 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the Bullworker by the inner grips, fingers facing downward, and position it at shoulder height. Take a deep breath and slide the two grips slowly toward each other, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

## 31 - Chest - muscular definition

(secondary effect : biceps and forearms)

(replaces Exercise 22 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the Bullworker by the inner grips, fingers facing upward, and position it at shoulder height. Take a deep breath and slide the grips slowly together, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 32 - Chest and shoulders

(secondary effect: upper back)



(replaces Exercise 23 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the two handles and position the Bullworker over your head. Take a deep breath and push slowly inward with both hands, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

**Also perform Exercise 44 on page 76.**



# Arms



We exercise our forearms a good deal through normal daily activity (any movement of the fingers, hands or wrists exercises the forearm muscles). We do less and less with our upper arms, however. Very few men perform push-ups or chinning exercises. Most of us rarely do much pulling, pushing, lifting or carrying. As a result, our upper arms no longer have full strength and resilience.

Fat deposits are frequent underneath the upper arms. This is only the visible tip of the iceberg. The real damage comes from the fat which forms around the muscle fibers, restricting the range of muscle movement and drastically reducing strength. We have difficulty lifting even moderately heavy loads, pushing or pulling bulky objects or even carrying a suitcase or a carton of groceries more than a few yards. In extreme cases, we are plagued by arm pains resulting from insufficient vasculature.

Precisely because these muscles are so rarely used, they respond about five times

faster to exercise than the forearm muscles. On the days you perform specialized training for your arms, the following exercises should be performed in place of—or in addition to—the exercises in the daily fitness training program, as indicated.

Specialized training for upper arms: Exercises 33-37 on the following pages.

Specialized training for forearms: Exercises 28 (page 61), 30 (page 62), 34 (page 66) and 38 (page 70).

### 33 - Biceps - inner range - and forearms

(secondary effect: chest and triceps)



(replaces Exercise 1 in daily fitness training)

*Stand with your weight forward on your right foot. Grasp the upper cylindrical grip with your left hand, palm facing outward, and the lower cylindrical grip with your right hand, palm facing inward, at waist height. Take a deep breath and push slowly upward with your right hand, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise with your left hand (right hand holding upper grip, left hand pushing upward on lower grip).*

*Repeat the exercise with each hand.*

## 34 - Biceps - full range - and forearms

(secondary effect: shoulders)

(replaces Exercise 8 in daily fitness training)

*Stand with your feet on top of one of the exterior traction ropes. Grasp the exterior rope on the other side of the Bullworker near the center with both hands, palms facing upward, and stand up. Pull up slowly with your forearms, then slowly relax the pressure. Your upper arms should remain stationary during the exercise. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

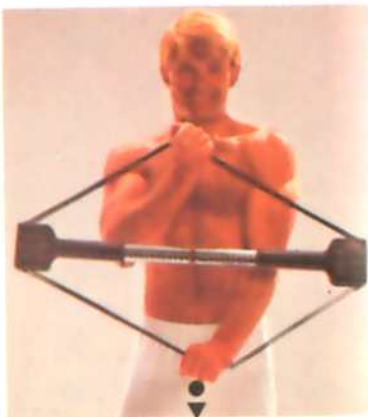


## 35 - Triceps (secondary effect: biceps)

(replaces Exercise 25 in daily fitness training)

*Grasp the upper two ropes with your right hand, palm facing upward, and the other two ropes with your left hand, palm facing downward.*

*Push down slowly with your left hand, then slowly relax the pressure. Your right hand should remain stationary. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise with your left hand grasping the upper ropes and your right hand the lower ropes. This time the right arm should do all the work; the left hand should remain stationary. Perform the exercise a second time with each arm.*



## 36 - Biceps - inner range, left and right sides

(secondary effect: upper back)



(perform in addition to daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp one handle with your left hand, palm up, positioned in front of your left hip. Your right hand should hold the other handle so that the tube of the Bullworker touches your right shoulder. Take a deep breath, and push slowly upward with your left hand, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise on the other side of your body. Repeat the exercise with each hand.*

## 37 - Biceps - full range, left and right sides

(secondary effect: upper back)



(perform in addition to daily fitness training)

*Sit on the edge of a chair with your right foot over both ropes on one side of the Bullworker. Grasp one rope only near the center with your right hand. Pull up slowly on the rope then slowly relax the pressure. Move only your forearm; your upper arm should be stationary throughout the movement. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise on the left side of your body.*

*Repeat the exercise on each side of your body.*



# Shoulders and upper back



Despite the fact that man has been walking upright for over 10 million years, many of us still show the strain of maintaining this relatively "new" position in the table of evolution. When shoulder and upper back muscles lose strength and tone, we begin slouching forward. All kind of symptoms of poor fitness often follow: neck pains, back pains, hampered breathing, oxygen starvation, impeded blood circulation, sagging stomach muscles, constipation.

Strengthening shoulder and upper back muscles sets off a chain reaction which is a powerful plus for general fitness: the chest is lifted, the back straightened and the abdominal wall contracted; the hips are pushed forward putting the weight on the balls of your feet when you walk, which in turn strengthens calves, back upper thighs, buttocks and abdominals. Your movements take on a powerful, athletic grace. You walk tall; you look good.

Concentrate on two muscles: the trapezius (upper back) which broadens your shoulders by enlarging the area between your neck and shoulder bones, and the deltoids which fill out your shoulders by padding the extremities with a thick sheath of muscle. (See drawings opposite page 96).

On the days you perform specialized training for your shoulders, the following exercises should be performed in place of—or in addition to—the exercises in the daily fitness training program, as indicated.

## 38 - Shoulders - full range, upper back and forearms

(secondary effect: biceps)



(replaces Exercise 2 in daily fitness training)

*Step on one outer rope with one foot (either foot). With both hands, grasp the outer rope on the other side of the Bullworker, palms facing downward. Stand up straight. Pull in your stomach and with your elbows bent, pull the rope slowly upward along your body with your forearms then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

## 39 - Upper back and shoulders - left and right sides

(secondary effect : triceps and broad back)

(replaces Exercise 21 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. With each hand grasp two traction ropes near the center and, holding the Bullworker on the right hand side of your body, position your hands at shoulder height. Pull the two ropes slowly apart like a bow then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise on the left hand side of your body. Repeat on both sides of your body.*



## 40 - Shoulders - Inner range

(secondary effect: upper back)



(perform in addition to daily fitness training)

*Kneel with your knees on top of both traction ropes on one side of the Bullworker. With both hands grasp the exterior rope only, your palms facing downward. Raise your forearms until the back of your hand touches your chin. Complete the movement by stretching your arms straight downward so they touch the Bullworker. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

## 41- Shoulders and upper back

(secondary effect: triceps)



(perform in addition to daily fitness training)

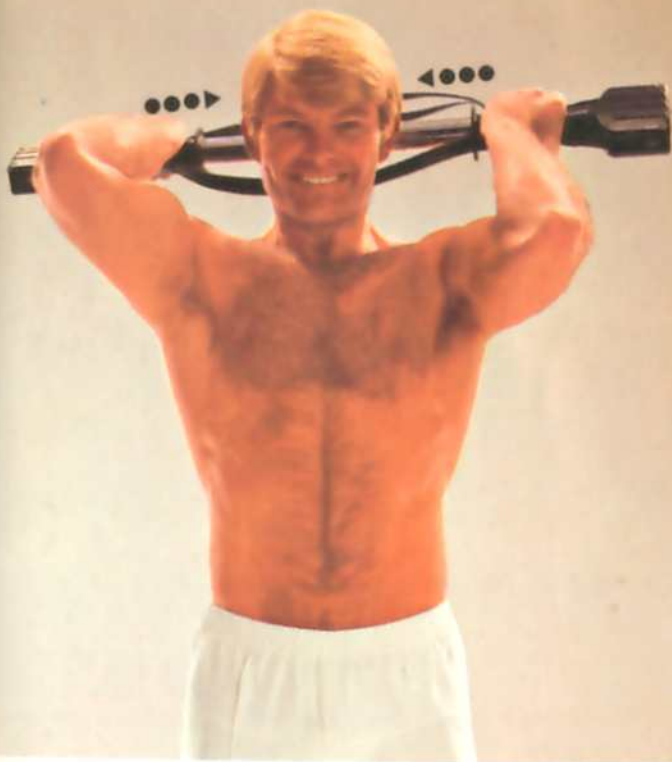
*Kneel with one handle of the Bullworker nestled against the front of your knees. Maintaining your body in a straight line from your shoulders to your knees, grasp one outer rope in each hand. Pull slowly outward and downward on the ropes then slowly relax the effort. If the Bullworker restricts movement, flip it over so that the opposite handle rests against your knees. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

## 42 - Upper back and shoulders - inner range

(secondary effect : biceps and forearms)

(perform in addition to daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp the two cylindrical grips, palms facing downward, and hold the Bullworker behind your head. Take a deep breath and push the grips slowly together then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*





## 43 - Shoulders - outer range - and upper back

(secondary effect: biceps and forearms)



(perform in addition to daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp one handle in each hand and hold the Bullworker behind your head. Take a deep breath and slowly push the handles inward then slowly relax the effort. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

**Also perform Exercises 32 (page 63) and 54-56 (pages 84-85).**

# Abdominals



A firm, flab-free abdominal wall is as important to your health as it is to your appearance.

As your doctor will corroborate: weakened muscles are the frequent cause of troubles in two areas of the body: your back and your abdomen.

Nature intended your chest to curve outward and your abdominal wall to curve inward, thus tucking your stomach up inside your rib cage, cinching in your intestines and stimulating digestion.

When your abdominal muscles are not kept toned-up by exercise, fat begins forming around the muscle fiber. This restricts both ease and range of muscle movement, thereby reducing strength and resilience. As a result, it takes more of an effort for us to use the muscles at all so we exert them less and fat forms faster. Eating and drinking less will reduce the amount of excess fat, but even after dieting your belly will still be soft and flabby.

Precisely because these muscles are used so infrequently in our normal daily activities, the results obtained from exercise often seem nothing short of miraculous. You can expect to be able to measure a loss of an inch or two within a week or ten days. Even more important is the day you begin feeling a mild rawness in the muscles after your workout. This is Nature's confirmation that the exercise is "taking". Effective exercise causes heat to accumulate in the muscles and carbon dioxide (stale air), water and lactic acid to form. The pleasant tiredness you feel after exercise is caused by a temporary stock-piling of lactic acid, until increased circulation furnishes sufficient oxygen for metabolism (growth and strengthening of the muscles.)

That feeling is the sign that you are on the home stretch, that your muscles are well on the way to regaining the strength to do the job Nature intended them for. You can accelerate your progress by consciously using your abdominal muscles to sit up straight and walk tall: shoulders back, chest high, stomach pulled in.

On the days you perform specialized training for your abdominal muscles, the following exercises should be performed in place of—or in addition to—the exercises in the daily fitness training program, as indicated.

## 44 - Abdominals - full range, lower chest and front thighs

(secondary effect : broad back and triceps)

*Starting position*



*End position*



(replaces Exercise 5 in daily fitness training)

*Kneel on the floor with one handle of the Bullworker resting against the front of your knees. Lean forward and grasp the outer rope only in each hand. Suck in your stomach and pull the ropes slowly towards you, then slowly relax the pressure. If the Bullworker restricts movement, flip it over so that the opposite handle rests against your knees. Perform this movement so you feel the exertion in your abdominals not your shoulders. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

## 45 - Abdominals

(secondary effect: broad back and triceps)

(replaces Exercise 15 in daily fitness training)

*Stand with your heels together, one handle of the Bullworker held securely between your feet. Resting both hands on the upper handle, bend forward from the waist. Push down slowly on the handle, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

*This exercise is a little tricky: you must keep your arms, legs and back straight (especially your back) so that the abdominal muscles are doing the work, rather than your arms and shoulders. When you get it right, it's an extremely effective method for you to get rid of a pot belly.*



## 46 - Abdominals (secondary effect: broad back)

(replaces Exercise 16 in daily fitness training)

*Kneel on the floor with one handle of the Bullworker resting against the front of your knees. Grasp the other handle of the Bullworker with both hands, your arms stretched out straight. Pull in your stomach and slowly press down on the Bullworker, then slowly relax the pressure. Keep your arms and back straight and concentrate on exerting the effort with your front stomach muscles rather than your arms. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*





## 47 - Abdominals - inner range

(secondary effect: broad back)



(replaces Exercise 17 in daily fitness training)

*Kneel on the floor, sitting back on your heels, with one handle of the Bullworker resting against the front of your knees. Grasp the upper grip with both hands, your hands facing inward. Pull in your stomach and slowly press down on the Bullworker, then slowly relax the pressure. Keep your arms and back straight and concentrate on exerting the effort with your abdominal muscles rather than with your shoulders. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

## 48 - Abdominals - muscular definition

(secondary effect: broad back)

(replaces Exercise 18 in daily fitness training)

*Sit on the floor, one handle of the Bullworker nestled between your ankles. Grasp two ropes in each hand. Pull slowly down on the ropes, then slowly relax the pressure. If the Bullworker restricts movement, flip it over so that the opposite handle is between your ankles. Repeat 6 times maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*





## 49 - Side stomach - lower range

(secondary effect : abdominals, chest and broad back)



(perform in addition to daily fitness training)

*Kneel with one handle of the Bullworker resting against the side of your right knee. Grasp two traction ropes in each hand, your arms stretched out straight. Keep your abdomen facing forward; do not twist your trunk toward the right. Pull in your stomach and push slowly down on the ropes, then slowly relax the pressure. Perform the movement slowly; do not jerk down on the ropes. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the movement on the left side of your body. Repeat the exercise once on each side of your body.*

## 50 - Side stomach - upper range

(secondary effect: abdominals, chest and broad back)



(perform in addition to daily fitness training)

*Kneel with one handle of the Bullworker resting against the side of your left knee. Cradle both hands over the other handle, your arms stretched out straight. Keep your abdomen facing forward; do not twist your trunk toward the left. Pull your stomach in and push down slowly on the handle, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise on the right side of your body. Repeat the exercise a second time on both sides of your body. Keep your back and arms straight. Perform the movement so you feel the exertion in your side stomach muscles rather than in your shoulders.*

## 51- Abdominals - left and right sides

(secondary effect : front thighs and broad back)

(perform in addition to daily fitness training)

*Sit on the edge of a chair with one handle of the Bullworker resting on your left knee. Grasp two traction ropes in each hand and hold the Bullworker in a vertical position. Take a deep breath, pull in your stomach and slowly lift your left leg pushing up against the Bullworker with your knee, then slowly relax the pressure. If the Bullworker restricts movement, flip it over so that the opposite handle rests on your knee. Use your arms only to hold the Bullworker in position; all the effort should be exerted with your knee. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise with your right knee. Repeat the exercise a second time with each knee.*

Also perform Exercise 61 (page 90)



# Back



Good muscle tone in the back muscles, along with increased strength and resilience, can pay important dividends throughout your life.

The term: "back muscles" is somewhat misleading, since the back contains three quite distinct muscle groups.

Upper back and neck (trapezius). These important muscles support the neck and determine the width of your shoulders. Their function and development is explained on page 69.

Broad back (latissimus dorsi). These muscles broaden your chest and develop that athletic V-shape. Since they are rarely called upon in the performance of normal activity, they grow rapidly in response to exercise.

Lower back (erector spinae). These relatively small muscles are particularly important in fitness training. They're the muscles which hold your trunk upright, supporting the bulk and weight of your back, chest and shoulders. When poorly irrigated due to sluggish circulation, these muscles can be the source of crippling pain.

On the days you perform specialized training for your back muscles, the following exercises should be performed in place of—or in addition to—the exercises in the daily fitness training program, as indicated.

Specialized training for broad back: Exercises 52-58.

Specialized training for lower back: Exercises 59-60.

## 52 - Broad back - upper section

(secondary effect: triceps)

(replaces Exercise 4 in daily fitness training)

*Sit on the end of a chair with one handle of the Bullworker resting on your knees (either knee). Grasp one of the outer ropes in each hand. Suck in your stomach and pull slowly down and outward on the ropes, then slowly relax the pressure. Practise this movement until you feel the exertion in your upper back. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 53 - Broad back - upper section

(secondary effect: triceps)

(replaces Exercise 11 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp both handles with the Bullworker positioned behind you, arms held straight. Pull your stomach in and slowly press the two handles together, then slowly relax the pressure. At the outset, you may not be able to move the handles at all. This is unimportant, provided you feel the effect of the exercise in your upper back. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise once again.*





## 54 - Broad back - full range - and shoulders

(secondary effect: triceps)



(replaces Exercise 12 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. With each hand grasp one traction rope, your hands facing inward. With your arms at shoulder height, hold the Bullworker in a vertical position. Pull slowly outwards on the ropes, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*

## 55 - Broad back - middle range - and shoulders

(secondary effect: triceps)

(replaces Exercise 13 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. With each hand grasp two traction ropes near the center, your hands facing inward, and position your arms at shoulder level. Pull slowly outwards on the ropes, then relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 56 - Broad back - middle range - and shoulders

(secondary effect: triceps)

(replaces Exercise 14 in daily fitness training)

*Stand with your feet about 12" (30 cm) apart. Grasp two traction ropes near the center with one hand and one traction rope near the center with the other hand, your hands facing inward. (It is immaterial which hand holds two ropes and which hand only one). With your arms positioned at shoulder height, pull slowly outwards on the ropes, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 57 - Broad back - lower section

(secondary effect : shoulders and lower chest)

(replaces Exercise 26 in daily fitness training)



*Kneel, sitting back on your heels, one handle of the Bullworker resting against your knees. Grasp one rope in each hand and pull slowly downwards and outwards (see photo), then slowly relax the pressure. If the Bullworker restricts movement, flip it over so the other handle is in front of your knees. Make the effort with your back, not your shoulders. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Repeat the exercise.*

## 58 - Broad back - left and right sides

(secondary effect: biceps)

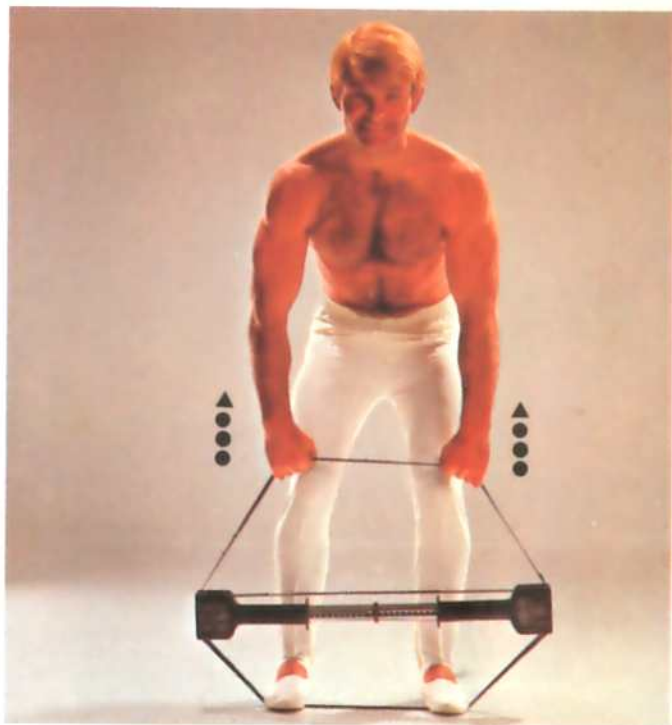


(perform in addition to daily fitness training)

*Stand with your weight poised on your left foot and your left hand holding one handle of the Bullworker on top of your left thigh. Leaning forward from the waist, grasp the other handle with your right hand, your right arm fully extended. Pull in your stomach and push slowly down with your right hand, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise on the left side. Repeat the exercise on both sides of your body.*

## 59 - Lower back and rear thighs

(secondary effect: buttocks)



(perform in addition to daily fitness training)

*Step on both traction ropes on one side of the Bullworker, your feet spaced about 12" (30 cm) apart. Grasp one traction rope on the other side of the Bullworker with both hands, hands facing inward. With your weight poised forward on the balls of your feet, your head held high, your back straight, slowly raise your body to an upright position then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Keep your hands in front of your legs throughout the exercise and concentrate on performing the exercise so that you feel the maximum effect in your lower back.*

*Perform the exercise a second time.*

## 60 - Lower back

(secondary effect: feet)

(perform in addition to daily fitness training)

*Sit on the floor with your feet through both ropes on the far side of the Bullworker. With both hands, grasp one (or both) traction ropes, hands facing downwards. With your arms straight out, stretch slowly backwards as far as you can (decide whether holding one rope or both ropes works better for you), then slowly come back to a sitting position. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the exercise a second time.*





# Legs

Take a minute to study the function of the leg muscles, as described on page 96. As you will see, there are six distinct muscle groups involved. The two muscle groups located alongside your hips and under your buttocks control both lateral leg movement and the range and thrust of pelvic mobility. (Exercises 64-66). There are three very large muscle groups in your upper legs (front thighs, back thighs and inner thighs). If you were in the track team or played soccer or rugby in school, chances are your thigh muscles are pretty well developed. But they probably lack muscle tone, particularly the inner thigh muscles which are rarely exerted in normal daily activity. (Exercises 61, 62 and 66 for front thighs, exercise 63 for rear thighs and exercises 62 and 64 for inner thighs).

An important extra benefit from isotonic thigh exercise: stimulated circulation and deeper breathing.

On the days you perform specialized training, the following exercises should be performed in place of—or in addition to—the exercises in the daily fitness training program, as indicated.



## 61- Front thighs and side stomach

(secondary effect: buttocks)

(replaces Exercise 3 in daily fitness training)

*Sit down and insert your feet between the tube of the Bullworker and the traction ropes. Sitting well back in a chair, extend your legs out in front of you. Pull in your stomach and push slowly outward with your feet, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 62- Front thighs, inner thighs and calves

(secondary effect: feet and rear thighs)



(replaces Exercise 19 in daily fitness training)

*Stand with your feet on top of the traction ropes on one side of the Bullworker. Grasp the other two ropes, hands facing down, about 12" (30 cm) apart. Bend your knees all the way down then slowly straighten back up as far as you can. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Keep your arms straight throughout the movement; exert the effort with your legs, not with your arms. Perform the exercise a second time.*

## 63 - Calves, rear thighs and feet



(replaces Exercise 20 in daily fitness training)

*Sit down and slip your right foot over the two ropes on one side of the Bullworker. Grasp the other two ropes with both hands, palms facing downward, and sit well back in the chair. Pull in your stomach and push out with your right leg, then slowly relax the pressure.*

*Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Perform the same series with your left leg.*

*Repeat the exercise with each leg.*

## 64 - Legs and inner thighs

(secondary effect: rear thighs)

(replaces Exercise 24 in daily fitness training)

*Sit on the edge of a chair. Grasp the two cylindrical grips, palms facing downward, with the Bullworker held just below knee level, your forearms resting on the inside of your knees. Press your knees slowly inward against your forearms, then slowly relax the pressure. Do not exert pressure with your arms. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time*



## 65 - Legs and buttocks

(secondary effect: front thighs)

(perform in addition to daily fitness training)

*Lie down on your back, your knees arched upward, your feet close together. Position two traction ropes outside each knee, the Bullworker nestled between your knees. Push slowly outward with your knees, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*



## 66 - Legs, buttocks and front thighs



(perform in addition to daily fitness training)

*Sit on a chair so that your legs form a 90° angle. (If the chair is a little low, use a cushion; if a little high, raise your heels off the ground.) Slip two ropes over each knee and move your knees far enough apart to maintain the Bullworker in a stable position. Pull in your stomach and push slowly outwards with your knees, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform the exercise a second time.*

**Also perform Exercise 60 (page 88).**



## 67 - Buttocks

(secondary effect : shoulders and upper back)

(perform in addition to daily fitness training)

*Lie on your back, your legs on the floor; with both feet over the two ropes on one side of the Bullworker. Grasp the other two ropes near the center with both hands. Pull in your stomach and slowly lift your legs off the ground, then slowly lower your legs back down to the floor. The higher you raise your arms, the more effective the exercise. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat. Perform a second series.*



## 68 - Neck and chin



(perform in addition to daily fitness training)

*Kneel with one handle of the Bullworker resting against the front of your knees. Position the other handle underneath your chin bone, cushioning your chin by inserting your hands between the handle and your chin. Pull in your stomach and push slowly down on the handle with your chin, then slowly relax the pressure. Repeat 6 times, maintaining the effort for 7 seconds on the last repeat.*

*Do not exert any effort with your arms; make your neck do all the work.*

*Perform a second series.*

# Your muscles

To get the most out of the training, you must concentrate on performing each exercise so that the main effort is exerted by the muscle groups specified in the instructions.

This chart serves as a handy reference for identifying the major muscle groups in your body and for selecting the exercises which have a primary effect (red numbers) or a secondary effect (blue numbers) on the muscles you want to work on. (The exercises are described in numeral order, beginning on page 60.)

**1. Shoulders** (deltoids). Broaden the shoulders by upholstering the shoulder bones with a thick sheath of muscle. (32, 38, 39, 40, 41, 42, 43, 54, 55, 56; 30, 34, 57, 67.)

**2. Front upper arms** (biceps). Growth in size means added power for lifting, pulling and all kinds of sports. (33, 34, 36, 37; 27, 28, 29, 31, 35, 38, 42, 43, 58.)

**3. Rear upper arms** (triceps). Fills out shape and girth of the upper arms. (35; 33, 39, 41, 44, 45, 52, 53, 54, 55, 56.)

**4. Forearms** (flexors and extensors). Builds sinewy forearms, puts power into all movements performed with the hands. (28, 30, 33, 34, 38; 27, 29, 31, 42, 43.)

**5. Chest** (pectorals). Builds broad arched chest, emphasizes muscle definition. (27, 28, 29, 30, 31, 32; 33, 49, 50.)

**6. Lower chest** (serratus magnus). Lifts the chest and increases the volume of the rib cage for deeper breathing and improved fitness. (28, 44; 57.)

**7. Front stomach** (abdominals). Sucks in the abdominal wall to improve your appearance and your health. (44, 45, 46, 47, 48, 51; 49, 50.)

**8. Side stomach** (external obliques). Cinches in your waistline to form the keystone of an athletic V-shape. (49, 50, 61.)

**9. Upper back** (trapezius). Broadens and reinforces the shoulders, supports the neck and head. (38, 39, 41, 42, 43; 32, 36, 37, 40, 67.)

**10. Broad back** (latissimus dorsi). Increases chest circumference and fills out the athletic V-shape. (52, 53, 54, 55, 56, 57, 58; 39, 44, 45, 46, 47, 48, 49, 50, 51.)

**11. Lower back** (erector spinae). Holds your trunk upright, assures good posture and carriage. (59, 60.)

**12. Buttocks** (gluteals). Improved muscle tone, firms up muscles, reduces excess flab and girth. (65, 66, 67; 59, 61.)

**13. Front thighs** (quadriceps). Gives your thighs an athletic, muscular shape. (44, 61, 62, 66; 51, 65.)

**14. Rear thighs** (biceps femoris). Fills out the back of the thighs, increases strength and endurance for standing, walking, running. (59, 63; 62, 64.)

**15. Inner thighs** (vastus internus). Trims off flab which comes from sitting long hours at work, in a car, etc. (62, 64.)

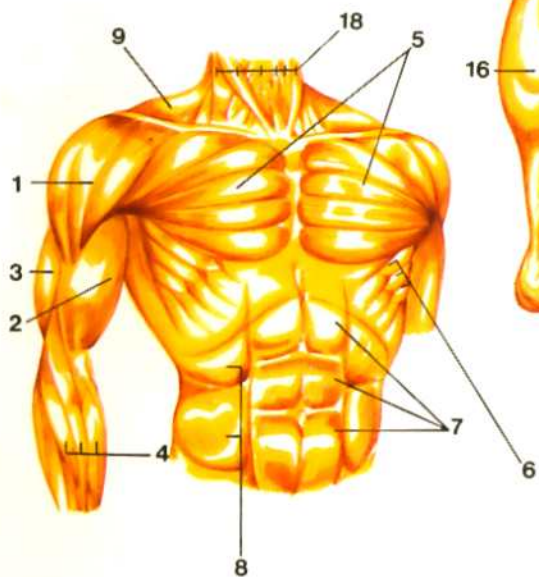
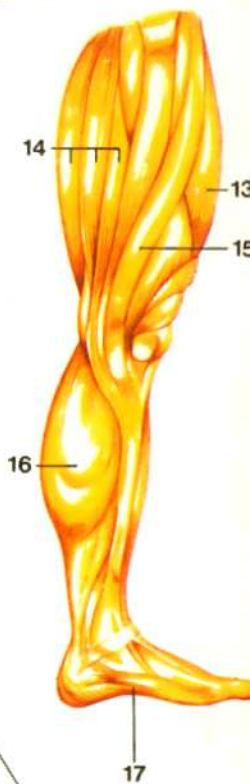
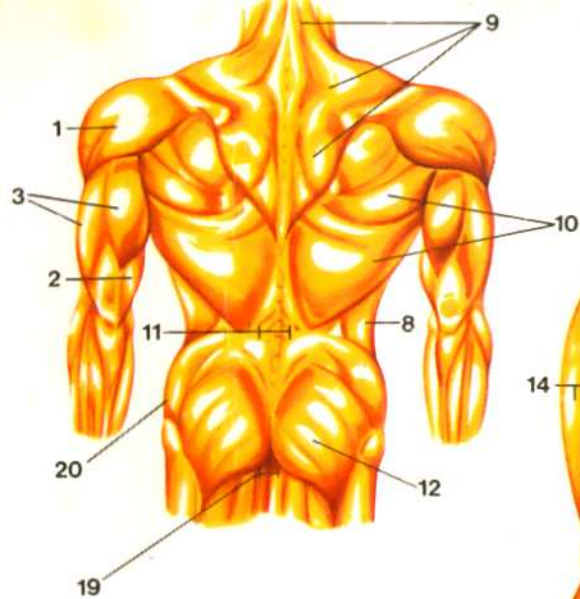
**16. Calves** (gastrocnemius). Fills out the muscles of the lower leg, puts the spring into your step. (62, 63.)

**17. Feet** (plantars). Supports the arch, builds strength for standing longer, walking or running further. (63; 60, 62.)

**18. Neck.** Broadens and strengthens neck. (68.)

**19. Legs** (gracilis). Increases force of pelvic thrust and scissor grip power of legs. (64.)

**20. Legs** (tensor fascia lata). Expands range of pelvic movement and outward scissor action of legs. (65, 66.)



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